# Analyse of the Water and Sanitation KAP survey realized in Chipindo in 2005 Huila Province-Angola

# SUMMARY

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## A.  INTRODUCTION

The improvement of access to drinkable water is linked both to the construction/ rehabilitation of protected water points and the improvement of knowledges and hygienic practices on Water and Sanitation by the users. As a matter of fact the lack of good hygiene practices can lead to the contamination of water during transport and/or storage although using a protected water point.

A KAP[1] survey is a tool that enables the measurement of the impact of the hygienic promotion teams on the spreading of knowledges and good practices within users.

The present report will detail and compare the results from initial and final survey realized in 2005 (January and October), within the implementation of the UE program in Chipindo (Angola).

## B.  CHIPINDO CONTEXT

### B.1. Geographic Context

Chipindo Municipality is located in the North part of the Huila Province, 485 km East from Lubango, and 150 km South of Huambo. It is located in the "Plano Alto" at an approximate altitude of 1600 m.

### B.2. Demographic Context

Chipindo municipality represents a population of 60 022 inhabitants (according the last estimation of the local Administration).

The population is mainly composed of the Umbundu group, although there is a minority of Nganguelas and Tchokwes within the Municipality.

The beneficiaries from the UE project realized in 2005 represent a population of 7 749 persons displayed in 20 communities. They were beneficiaries of water point's constructions or rehabilitations in 9 communities, and of hygiene promotion in 20.

### B.3. Water and Sanitation Context

The Plano Alto is characterized by an abundant hydrographical system, rich in rivers, streams and naturals springs. The first water level is reached at 5 to 10 metres depth and lies within a limestone's layer. This first aquifer is very sensitive to seasonal variation (high variations registered in the water level), and to superficial contamination. A second aquifer is reached at 20 to 40 metres depth and shows good yield, and high protection from superficial contamination.

Before the beginning of the UE project, the number of people with access to a protected water point was estimated at 4 700 people (or 7% of the population). At the end of the project 8 400 persons are supplied with protected water point (or 12% of the population)

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[1] Knowledges, Actituds and Practices

## C.  METHODOLOGY

The KAP survey was performed twice with the same questionnaire: once in the beginning of the project and once in the end. The initial KAP was performed in 11 communities, but unfortunately the lack of access to Bambi, for security reasons, avoided us from realizing the final survey in Chipindo Vissamba, Ngondo, Cassanda and Bambi. Therefore the present document will report the results from only 7 Communities that have been interviewed at the end of the project.

The selection of the house interviewed has been realized in a random way using the pencil methodology.

### C.1. Interviewed people

According to the cultural habits, the women are the one in charge of water recuperation, storage and hygienic habits in the families. Therefore the interviews have been performed with women only.

According to the statistics made after the KAP survey realization, an average of 5,4 persons are living per household. Furthermore a minority of women had access to school as showed in the Table 1:

**Table 1: Proportion of women with education and husband.**

| Women that received school education | Women that didn't went to school | Women with Husband | Women without Husband |
|---|---|---|---|
| 24,4% | 76,4% | 90,6% | 10,2% |

The repartition by age of the women interviewed is showed in Figure 1:
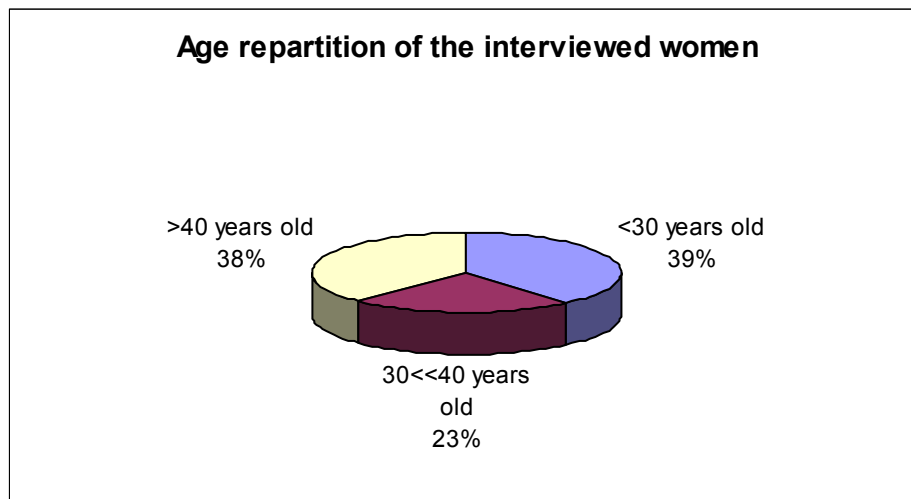


**Figure 1: Representation of the age repartition within interviewed women.**

190 Women were interviewed within 7 communities' beneficiaries from the constructions and hygiene promotion program.

### C.2. Methodology for the analyse of the KAP survey

The data gathered during the KAP survey were processed with an Excel table. A specific calculation sheet was created in order to facilitate the introduction and analyse of the results. This system enables the comparison of several criteria although with some limitations.

## D.  RESULTS

### D.1. Practices

The realization of the interview was completed by some direct observations on the practices and organisation of water storage in the houses. The result of these observations is shown in Figure 2.

**Evolution of Practices**
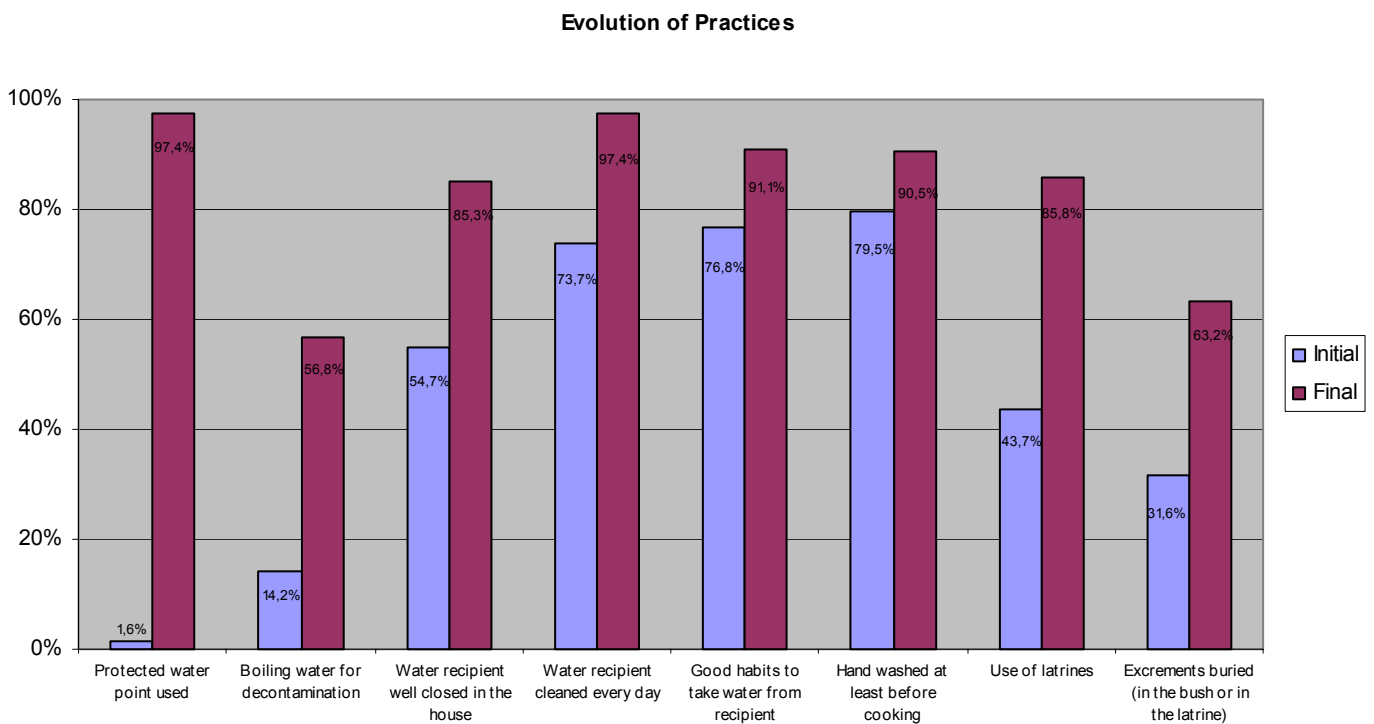


**Figure 2: Evolution of Practices linked with Water and Sanitation**

All the communities interviewed (7 in total) were beneficiaries of the EU program of water point's construction or rehabilitation. This situation explains the results obtain in terms of uses of protected water points. It has to be emphasized that at the end of the project only 12% of the population of Chipindo has access to protected water point.

In terms of hygiene practices, the results on storage, on use of latrines and on excrement disposal are showing a significant improvement of the practices.

The results on question such as treatment of water, hand washing habits, hygiene of the water recipient are also showing a significant improvement, if not of real practices, at least of the knowledge on how it should be.

### D.2. Knowledge

The results of the questions made on specific knowledge linked with water and sanitation is shown in Figure 3.

**Evolution of knowledge**
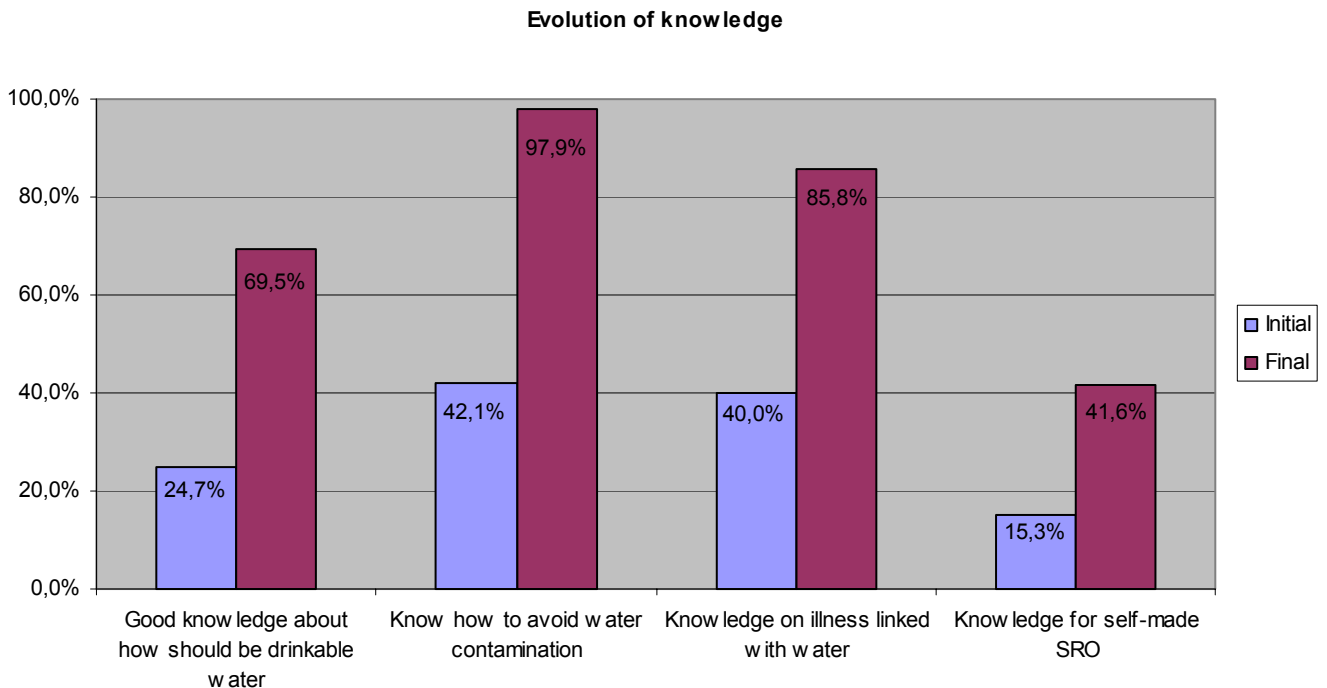


**Figure 3: Evolution of knowledge linked with water and sanitation.**

It has been asked to the women "how drinkable water should be". The answers registered in the beginning of the program showed a low level of knowledge with answers such as: "good water", "clean water" or even "turbid water". The answers registered in the end of the program are showing an evolution in the understanding level with answers such as: "water without bacteria", or "boiled water".

The knowledge on how to avoid water contamination also improved significantly. At the end of the program almost every women was able to give three ways to avoid water contamination, such as "closing well the water recipient", "protecting the water point", or "using clean tools to take water from the recipient".

At the end of the program the number of women with a good knowledge on the illness linked with water doubled, as well as the number of women able to prepare the homemade oral SRO to hydrate the children with diarrhoea. The work of information diffusion still needs to continue in order reach a 100% of people with basic knowledge. The activists, who will stay in the communities at the end of the program, will be able to continue this work in order to ensure the appropriation of the new habits in each community.

### D.3. Diarrhoea level

Each woman has been asked on the number of children under 5 years old in the house, and the number of these children that had suffered from diarrhoeas in the last 15 days before inquiry. In the beginning of the project (January) a total of 198 children under 5 years old were met with 69 that had suffered from diarrhoea in the last 15 days. In comparison at the end of the project (October) on 253 children met, only 30 had suffered from diarrhoea in the last 15 days. This result is illustrated in the Figure 4:

**Child Under 5 years old with diarrhea in the last 15 days**
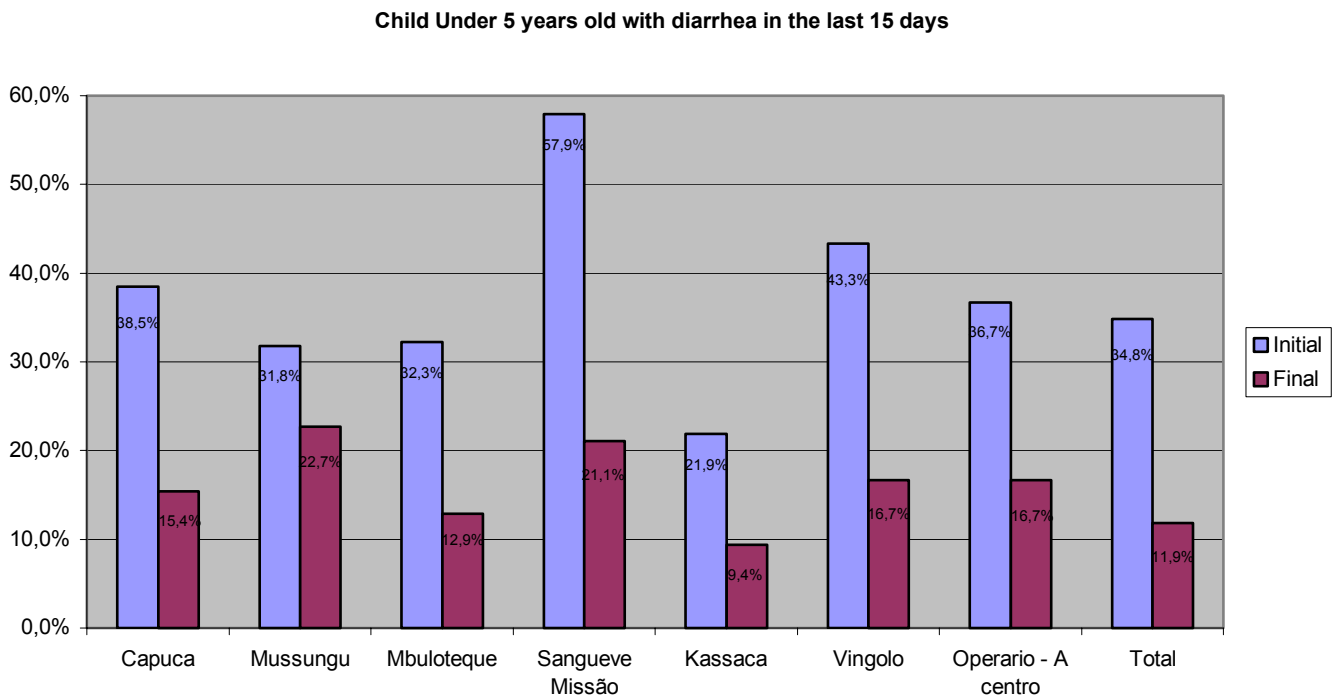


**Figure 4: Evolution of the diarrhoea level within under 5 years old in the last 15 days before survey.**

This result is reinforced by the statistics registered in the Chipindo Health Center: The Figure 5 shows the number of water related disease registered in the Chipindo Health Centre during the years 2004 and 2005. The results from October 2005 are not yet available as this study is being realized. Nevertheless the comparison can be made with the statistics from September. The comparison between consultancies for water related disease (diarrhoea, dysentery, and parasites) in January and September indicates a general increase in the consultancy of 43% in September 2005. This observation emphasizes the results met of a general decrease of the water related disease in the communities' beneficiaries from the program.
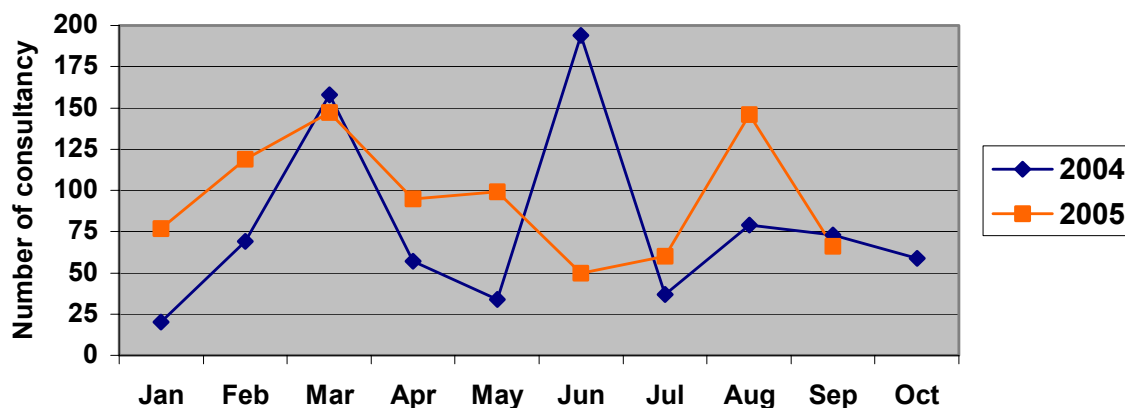
## Evolution of Water related disease in 2004 and 2005



**Figure 5: Evolution of the consultation on water related disease (diarrhoea, dysentery and parasite) in the Chipindo health Centre in 2004 and 2005.**

### D.4. Other characteristics

#### D.4.1. WATER QUALITY

Our experience in Angola, and in other countries, shows that there is two moments for water contamination:

- Contamination at source: lack of protection, mixture of uses in the same site (laundry, human and animal supply), uses of stagnant waters, etc…
- Contamination during transport and storage: lack of recipient's protection, lack of hygiene, etc…

Therefore both construction/rehabilitation and hygiene promotion are necessary to ensure an improvement in drinkable water supply. Furthermore the analysis realised at water point are not sufficient to measure the access to potable water from beneficiaries. Some further analyses at household level are necessary to assess the efficacy of the program in order to reach the Specific Objective of "improvement in drinkable water supply".

The main contamination met in rural area, and specifically in Chipindo is from organic origin (human's and animal's excrements). This contamination is measured using a bacteriological indicator called Escherichia Coli (E. Coli). This bacterium is representative of the presence of pathogen's coliforms from faeces. The E. Coli quantity is measured using the Kit del Agua. The results are expressed in a specific unit: coliforms/100 ml. The WHO norm recommend a level of 0 coliforms/100 ml for drinkable water, and the Sphere norm gives a tolerance until 10 coliforms/100 ml.

The analyses realized each month in every Chipindo's protected water point showed a level of 0 coliforms/100 ml almost regularly[2].

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[2] Some punctual contaminations were registered in wells for different reasons met and resolved. Decontamination with chlorine has been performed and the communities informed during the operations. BMEA (Water and Sanitation Municipal Brigade) was involved in these works.

A sampling campaign of household water was performed in January 2005 in order to assess the level of contamination at household level in communities supplied with a protected water point showing a good quality level at source (10 samples in each 9 communities). The results shown in Figure 6, presents a level of contamination particularly high with only 12% of the household consuming water free from faecal contamination.
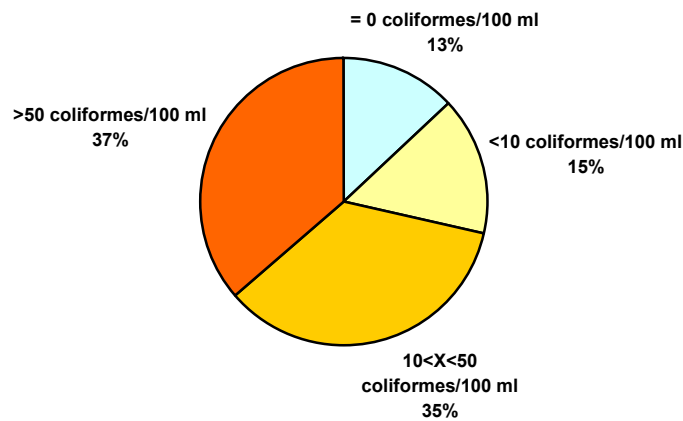


**Figure 6: Graphical representation of the results on water quality at household level in 10 communities with access to safe water point, in January 2005.**

The same campaign was performed in October 2005 in 9 communities (8 from the last inquiry and 1 beneficiary of the EU program in Chipindo). The results are shown in Figure 7.
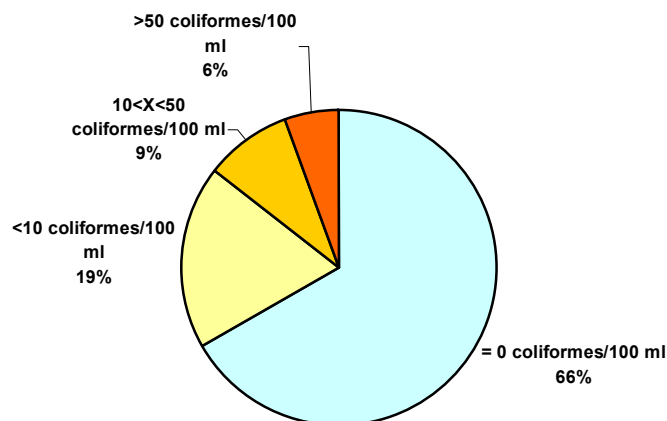


**Figure 7: Water quality at Household level within 10 communities with access to safe water point in October 2005.**

The improvement of the water quality at household level is revealed by these results and illustrates the efficacy of the work of hygiene promotion when it involves information on water quality. Still the spreading of these knowledges needs to be reinforced and followed by the GAS[3] and Activist's groups.

### D.4.2. WATER COMSUMPTION

The characteristics of water consumption have been inquired as well. The results from the final KAP assessment show an average of 8 litres per day per person for drinking and cooking. It has to be emphasized that water for personal hygiene is difficult to estimate as most of the people are taking bath directly in the rivers and streams. In comparison, the minimum required in a refugee camp according to sphere orientations is of 15 litres for drinking, cooking and personal hygiene. The results for each community are represented graphically in the Figure 8:



**Average consumption of Water per person per day**
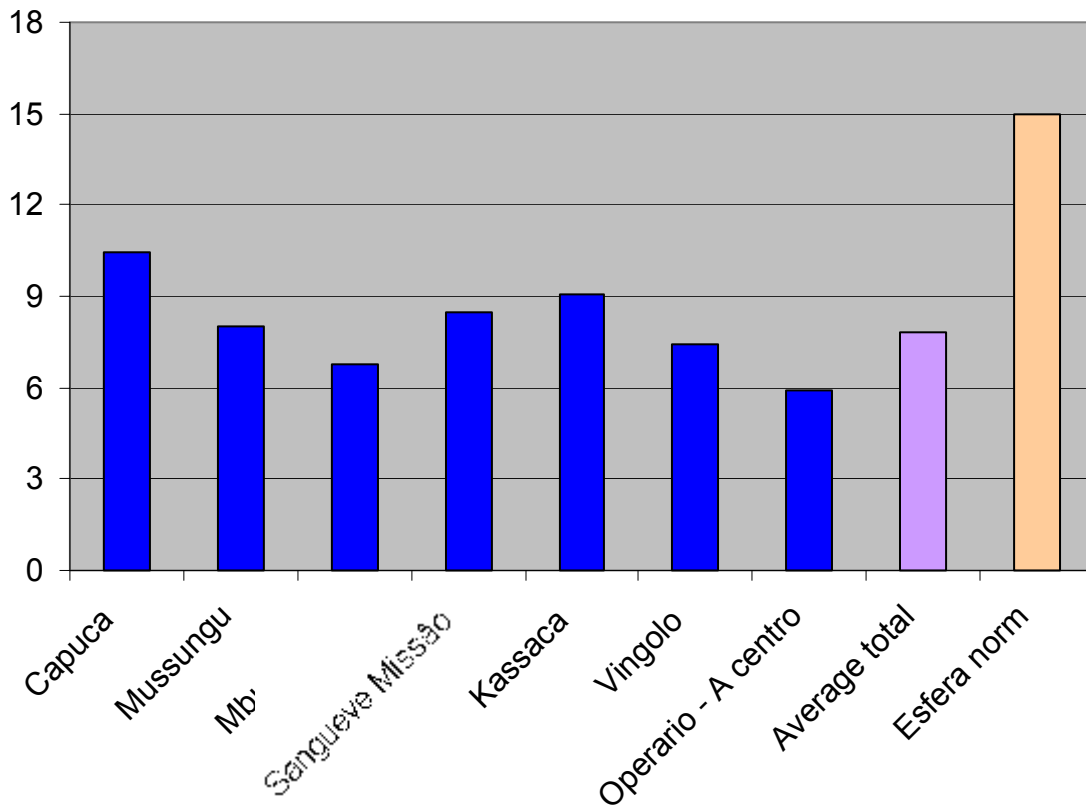
**Figure 8: Average water consumption per person per day in Chipindo Municipality.**

Furthermore Sphere norm recommends, in stable situation, the use of 30 to 60 litres per person per day. This comparison shows the low uses and consumption of water within Chipindo's household. This situation is probably due to the habit of using further water points that requires several trip a day. It will be interesting to follow the evolution of the water quantity consumption in order to assess if the construction of a protected water point in a shorter distance will increase the water consumption within communities.

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[3] Grupo de Agua e Saneamento = Water and Sanitatio Groups

### D.4.3. ENVIRONMENT

The observation of the household environment is also a good indicator of the evolution of practices. It has to be emphasize that generally the environment met in rural areas is much more healthy than the one met in urban areas. The Figure 9 is showing the environment observed at the beginning of the project, and the Figure 10 at the end of the project:
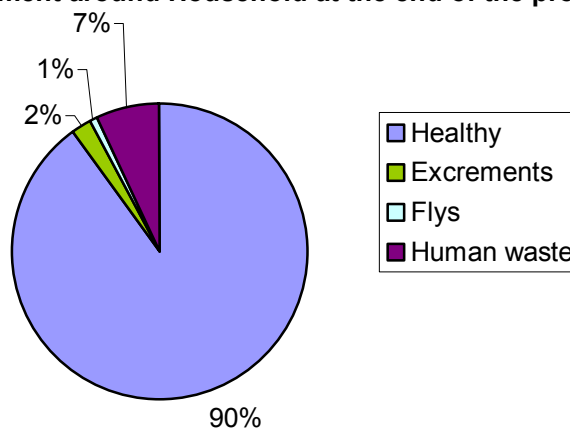
**Environment around Household at the beginning of the program**
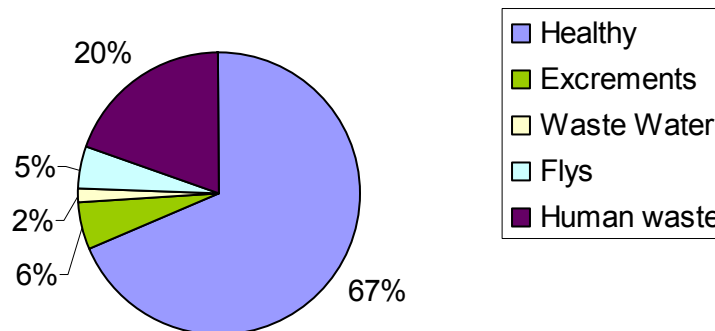


**Figure 9: Environment of the Household in the beginning of the project**

The information and training activities realized through Activists are showing good results in terms of improvement of the household environment as represented in Figure 10.

**Environment around Household at the end of the program**



**Figure 10: Environment around Household in the end of the Project.**

Part of the absence of wastewater may also be the result of the dry season.

# E. CONCLUSIONS

The comparison between the two KAP survey realized and the analysis of water at household level show an improvement of knowledges, practices and consume of drinkable water in the communities beneficiaries from the UE program in 2005. The consequence is a significant diminution of water related disease cases in the under 5 years olds population.

This situation is the result of the implementation of an integrated program with two major components:

1. Construction or rehabilitation of protected water points to facilitate the access to drinkable water,
2. Hygiene promotion through Activist's groups in order to inform on the risks linked with water contamination.

The interaction of both activities is the guarantee for an improvement of the water quality at household level and the diminution of water related disease.

Nevertheless, these results are representative of the communities beneficiaries of the program and not of the whole Chipindo Municipality where only 12% of the population has access to a protected water point. Therefore a follow-up of the hygiene promotion activities is required from the Municipality through the BMEA in order to spread the knowledges and ensure the sustainability of the project.